

PRE-CERCLIS SCREENING ASSESSMENT CHECKLIST/DECISION FORM

This checklist can assist the site investigator during the Pre-CERCLIS screening. It will be used to determine whether further steps in the site investigation process are required under CERCLA. Use additional sheets for the narrative.

Checklist Preparer: Ross Brittain / Environmental Manager 1/11/2012
 (Name/Title) (Date)
100 North Senate Avenue, Indianapolis, IN 46204 317-234-0345
 (Address) (Phone)
rbrittai@idem.in.gov
 (E-Mail Address)

Site Name: Braman, Chas. & Sons (U.S. Granules Corporation)

Previous Names (if any): _____

Site Location: 1433 Western Avenue
 (Street)
Plymouth, Marshall, IN 46563
 (City) (County) (ST) (Zip)
2
 (Congressional District)

Latitude: 41° 21' 10.40" N **Longitude:** -86° 19' 3.139" W

With regards to the Latitude and Longitude, please provide the following information: Accuracy in Meters +/-, Collection Method, Reference Datum, Reference Point, Source Map Scale, Point/Line/Area; Collection Date; Verification Method (see attached):

Complete the following checklist. If "yes" is marked, please explain below.		YES	NO
1.	Does the site already appear in CERCLIS?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Is the release from products that are part of the structure of, and result in exposure within, residential buildings or businesses or community structures?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Does the site consist of a release of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Is the release into a public or private drinking water supply due to deterioration of the system through ordinary use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.	Is some other program actively involved with the site (i.e., another Federal, State, or Tribal program)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6.	Are the hazardous substances potentially released at the site regulated under a statutory exclusion (i.e., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the NRC, UMTRCA, or OSHA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7.	Are the hazardous substances potentially released at the site excluded by policy considerations (e.g., deferral to RCRA Corrective Action)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8.	Is there sufficient documentation that clearly demonstrates that there is no potential for a release that could cause adverse environmental or human health impacts (e.g., comprehensive remedial investigation equivalent data showing no release above ARARs, completed removal action, documentation showing that no hazardous substance releases have occurred, EPA approved risk assessment completed)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.	Is there documentation indicating that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10.	Is there an apparent release at the site with no documentation of exposed targets, but there are targets on-site or immediately adjacent to the site or nearby (within 1 mile)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11.	Are there no releases or potential to release?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Please explain all “yes” answer(s), attach additional sheets or refer to narrative:

Site Determination: ☐ Enter the site into CERCLIS. Further assessment is recommended (explain below).
☒ The site is not recommended for placement into CERCLIS (explain below).

DECISION/DISCUSSION/RATIONALE:

In April of 2001, the American Journal of Public Health published an article (*Discovering unrecognized lead-smelting sites by historical methods*. Vol. 91, No. 4, pp. 625-627) naming 430 former lead-smelting sites that were unrecognized in the U.S., 14 of which were in Indiana. EPA directed each state to investigate the potential health and environmental risks associated with these smelting locations. During its investigations in 2002, IDEM staff were unable to discover the location of Charles Braman and Sons in Plymouth, Indiana (hereafter “Braman, Chas. & Sons” as listed in the original 2001 article). IDEM’s Memorandum of Decision dated Sept. 30, 2002, states that “IDEM does not intend to continue to investigate the site... unless better location information is received.”

On March 31, 2011, IDEM was contacted by a representative of the USA Today newspaper, who were conducting a follow up investigation on the sites listed in the 2001 article to determine if they had been assessed or remediated. On Oct. 20th, USA Today informed IDEM that they had been able to locate the Braman, Chas. & Sons site in Plymouth at 1433 Western Avenue, which is currently occupied by U.S. Granules Corporation (Figure 1). In addition, USA Today told IDEM that they had sampled area surface soils for lead using both XRF and lab methods.

The current operations of U.S. Granules Corporation include the recovery of aluminum foil by removing organic laminates, and no lead smelting. The processes at U.S. Granules are permitted for air emissions under IDEM authority, as delegated to them by EPA, and they have had no notices of violation of their permits.

IDEM staff used this “better location information” to screen lead in soil samples of opportunity around the site on Oct. 26th using a Niton XRF analyzer with a protective plastic bag covering the end. At that time, IDEM did not have access to the site and was primarily focused on public right-of-way areas downwind of the site to the east and northeast of 1433 Western Avenue (Figure 2). Twelve points were screened for surface lead and six of these points were below detection limits of the XRF. The six detections ranged from 10 ppm to 143 ppm lead in no readily discernible pattern except that the highest concentration was southeast of the site. These screening analysis data had an average surface soil lead concentration of 53 ppm with an upper 99% Confidence Limit of 105 ppm, using only the six samples with detections.

USA Today representatives updated IDEM on Nov. 15th with more details of their analysis for the Braman, Chas. & Sons site. Overall, USA Today reported to IDEM that they had taken 37 samples from a neighborhood with what they described as “elevated” lead levels primarily in the residential area bounded by Novelty St. to the north, Center St. to the east, Harrison St. to the south and Plum St. to the west. They also took five of what they called “comparison” samples in Centennial Park, three samples at a home in the 300 block of Baker St. and an unknown number of samples in a public field 0.75 miles southeast of the site. Their results ranged from 7 ppm lead in the 300 block of North St. to 1511 ppm lead in the 1100 block of N Center St., and seven of the 37 samples were above 400 ppm (Appendix A). IDEM does not know the exact locations of the sample points, nor does IDEM know if the results reported were XRF or lab results. IDEM’s concerns are that some of the samples may have been taken near old gravel driveways that were used by cars with leaded gasoline or taken near houses that had peeled leaded paint. Overall, the 37 samples of unknown origin in areas of “elevated” lead, according to USA Today, averaged 257 ppm lead with an upper 99% Confidence Limit of 368 ppm.

Since the USA Today samples were in areas where IDEM staff had not been, IDEM decided to investigate the area further on Dec. 16, 2011. IDEM was also able to gain access to the former Braman, Chas. & Sons site through U.S. Granules Corporation for this follow up visit. IDEM staff screened 17 points for lead surface soil contamination using the same Niton XRF on this second visit (Figure 2). Six points were screened on the U.S. Granules property, nine points were screened in the residential area to the east of the site where USA Today had sampled (including a sample taken in the kids playground area in Centennial Park downwind of the prevailing winds), and two points

were screened further northwest of the site to evaluate background lead values. Two of the points on the U.S. Granules property and one point in a grove of locust trees in the 1300 block of N Walnut St. were below the lead detection limits of the XRF. Both of the background samples taken northwest of the site were also below the instrument's detection limits. The highest surface soil lead concentration IDEM staff detected was 240 ppm in the right-of-way at 1XXX N Walnut St and the lowest (17 ppm) was at the playground in Centennial Park. This second screening exercise had an average surface soil lead concentration of 78 ppm with an upper 99% Confidence Limit of 121 ppm at points where lead was detected. Combining the data from both the October and December XRF screening exercises showed an average lead concentration of 70 ppm with an upper 99% Confidence Limit of 103 ppm.

Characterizing a site with the amount of screening data available for Braman, Chas. & Sons is typically beyond the scope of most Pre-CERCLIS Screenings. However, given the high profile of lead contamination from old smelters and the USA Today investigation, IDEM decided to be more thorough than usual in order to verify that the human health and environment of Plymouth was not at risk from historical lead contamination. The potentially impacted neighborhoods are also relatively old (a resident at 1XXX N Center St. said their home was built in 1890) and could also have lead sourced from other historical activities such as leaded house paint, leaded gasoline or other industries in the vicinity. Several homes in the neighborhood were actively peeling paint (Figure 3).

IDEM staff have carefully characterized the Braman, Chas. & Sons site for historical lead contamination. IDEM is confident that the available data show no ubiquitous lead contamination in the soils above actionable levels, and cannot positively attribute the low lead levels to the Braman, Chas. & Sons site. With no potential targets impacted by contamination that is attributable to the site, it is IDEM's decision that this site is not valid for placement into CERCLIS.

EPA Regional Review and Site Assessment Decision

Check the box(es) that apply:

- ☒ Not a Valid Site or Incident
☐ Incident for Further Action Under CERCLA

Recommended Further Action:

- ☐ APA
☐ Full PA
☐ Combined PA/SI
☐ SI

Defer/Refer to:

- ☐ Removal Program
☐ State/Tribal Program
☐ RCRA
☐ Brownfields
☐ Other: _____

Regional EPA Reviewer:

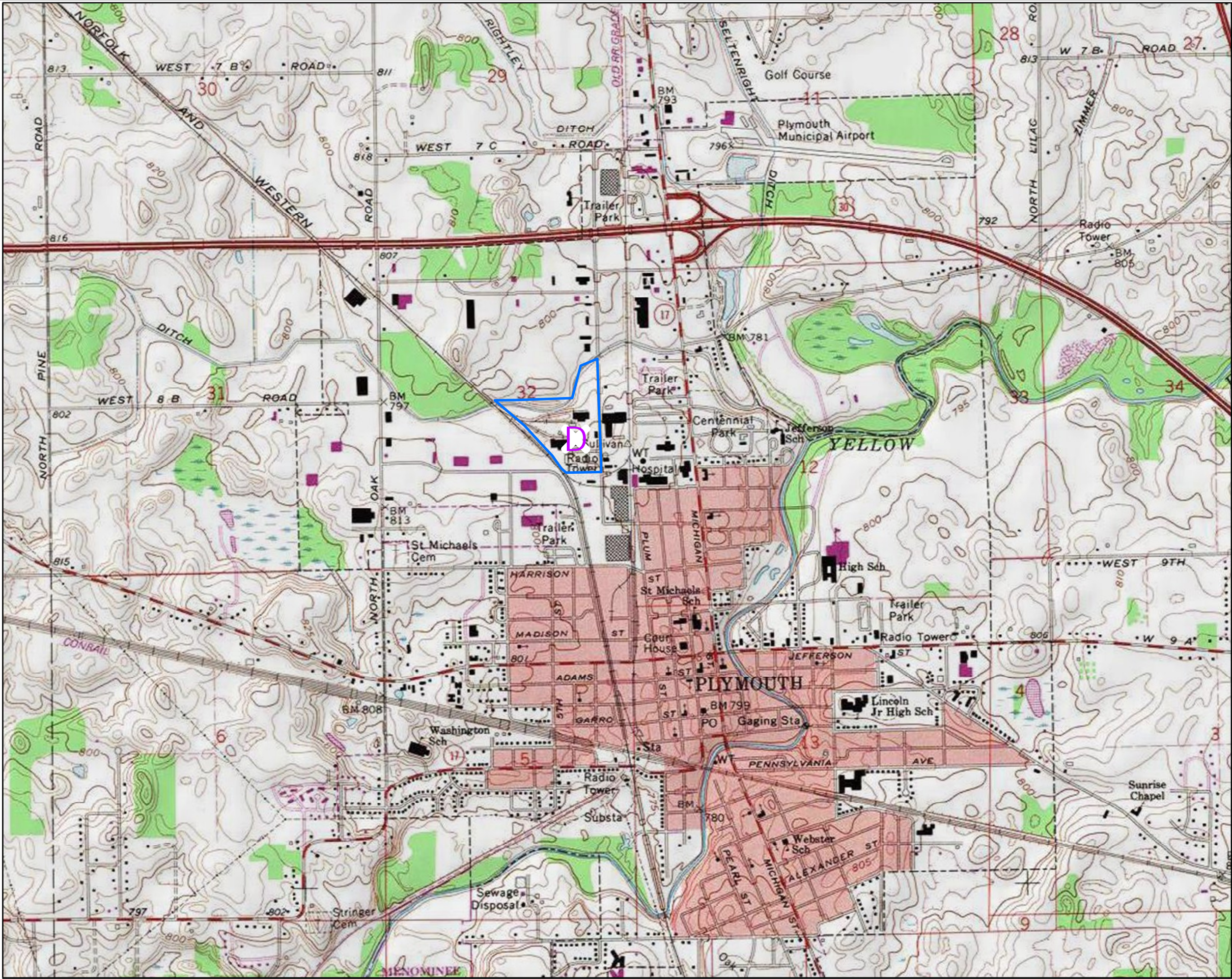
Maria M. [Signature]
Print Name/Signature

3/22/12
Date

State Agency/Tribe:

Ross Brittain [Signature]
Print Name/Signature

1/12/2012
Date



Site Location Map
Braman, Chas. & Sons
Plymouth, Marshall County
Latitude: -86°19'3.139" (West)
Longitude: 41°21'10.40" (North)

2



D

Approximate Center
Braman, Chas & Sons

□

Approximate Property Line
Braman, Chas. & Sons

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Mapped By: Kim Vedder, Office of Land Quality
Date: 01/10/2011

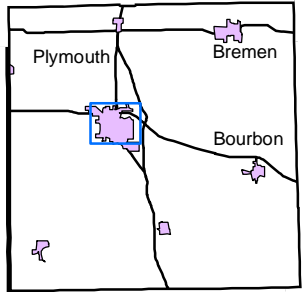
Sources:

Non Orthophotography

Data - IDEM Sampling data,
collected October and December 2011.

Orthophotography - Obtained from Indiana Map
Framework Data(www.indianamap.org)

Map Projection: UTM Zone 16 N **Map Datum:** NAD83

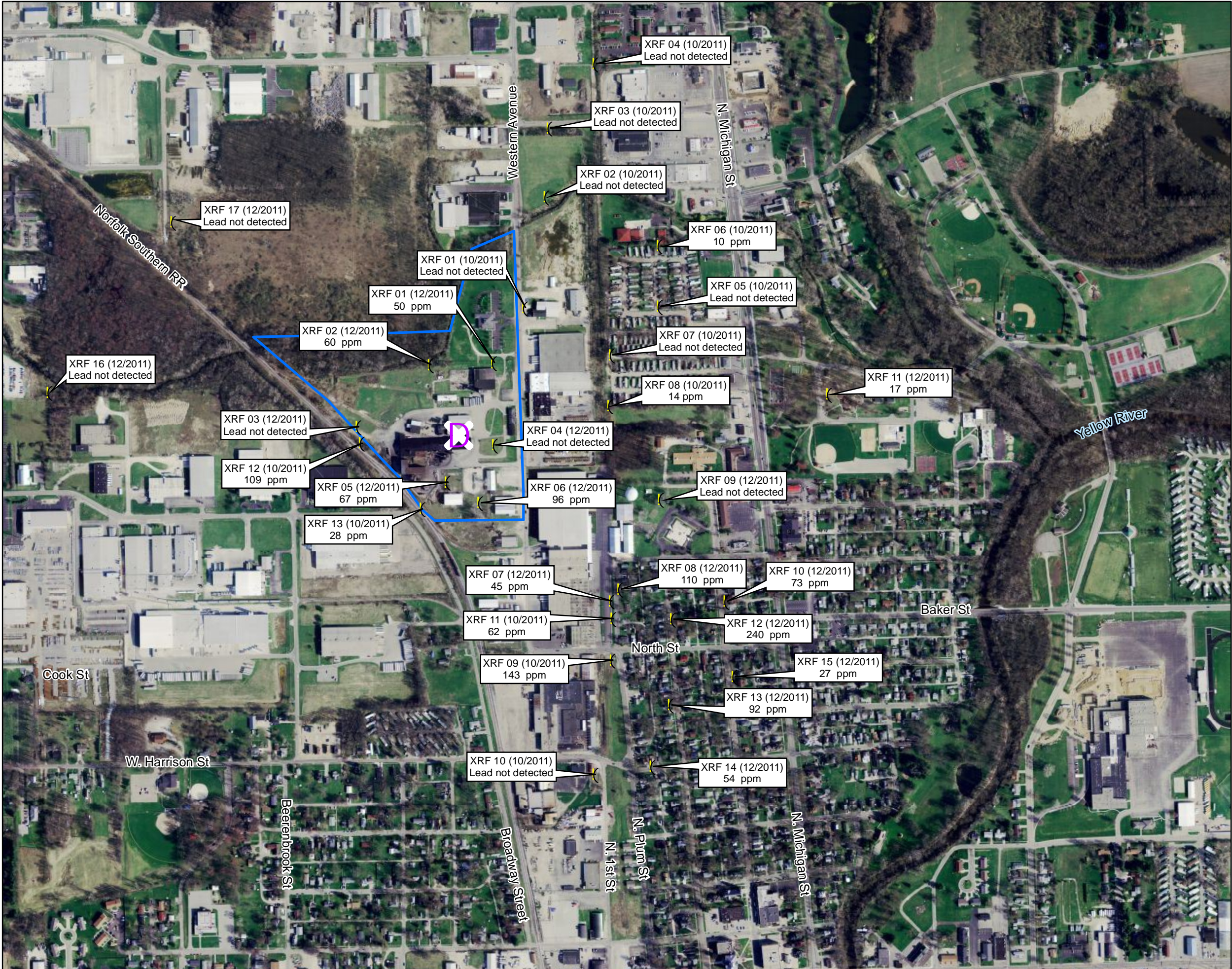


Marshall County



0 250 500 1,000 Meters

0 750 1,500 3,000 Feet



Lead Sample Locations
Braman, Chas. & Sons
Plymouth, Marshall County
Latitude: -86°19'3.139" (West)
Longitude: 41°21'10.40" (North)



- D** Approximate Center
Braman, Chas & Sons
- Approximate Property Line
Braman, Chas. & Sons
- X** Lead Sample Location,
collected with XRF
(**Non x-ray fluorescence analyzer**)

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.
Mapped By: Kim Vedder, Office of Land Quality
Date: 01/10/2011

Sources:
Non Orthophotography
Data - IDEM Sampling data,
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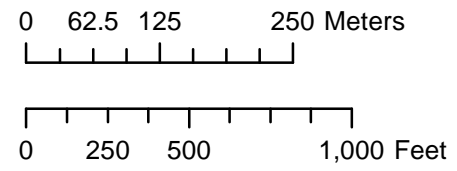
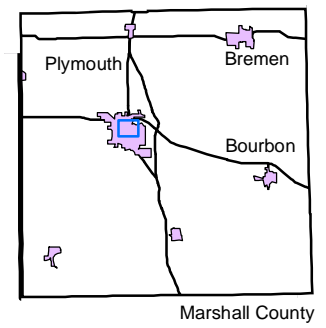




Figure 3. Houses on east side of 1100 block of N Center St., Plymouth, IN. Photo taken on 12/16/2011.

Appendix A

From: Young, Alison [<mailto:ayoung@usatoday.com>]
Sent: Tuesday, November 15, 2011 5:27 PM
To: HARTSOCK, AMY
Subject: USA TODAY interview request, Indiana lead smelting sites
Importance: High

Amy,

I look forward to hearing back from you on a good day and time to talk with staff about its assessments of risks around the old smelting sites brought to their attention by the EPA a few years ago.

As part of USA TODAY's examination of historical smelting sites around the country – and whether they pose public health threats through lingering lead contamination in soils, we tested soil (by XRF and lab methods) around two of the smelter sites in Indiana.

The two sites I'll want to talk with them in depth about are the Chas. Braman & Sons site in Plymouth and the Metals Refining/Glidden site in Hammond.

Site 114: Metals Refining/Glidden: 1733 Summer Street, Hammond, IN

The Indiana Department of Environmental Management began assessing this site in 2002, at the request of the EPA. According to state regulators' assessments of this site, lead smelting began at the property in 1920 and at one time it was "one of the largest secondary lead smelters in the United States," as well as a lead oxide plant. Records show lead was recycled at the plant in the 1930s by the Glidden Company, according to state reports, but it is not known when lead smelting ceased. The state did some initial soil sampling and in January 2010 the state returned to reassess the site. They took four samples on the smelter property and three of them ranged from 5,000 to more than 20,000 ppm of lead. Five soil samples from the top 1 inch of yards were taken in a neighborhood to the west and southwest; three samples in the neighborhood east of the site and three in the neighborhood to the northeast. The highest lead reading the state got was 216 ppm, the report said. "The exposure from lead to the residents surrounding Metals Refining appears to be minimal based on the findings from the current and previous investigations," the state's 2010 report says.

USA TODAY did more than 50 samples by XRF and lab methods within 1 mile of the smelting site, and found elevated lead levels in a residential neighborhood about 4/10th of a mile to the northeast. USA TODAY's tests, which generally involved multiple tests of surface soils in different parts of an individual home's yard, found higher lead levels than what IDEM found in the same area. Some examples:

- At a home with children in the 1900 block of Clay Street, XRF and lab tests of surface soils found 425 ppm of lead in bare, dusty soil around a young child's playhouse; 512 ppm and 370 ppm of lead in the vegetable garden; and 254 ppm just under sparse grass in the middle of the backyard.
- At another home in the 1900 block of Clay Street, tests of surface soils showed lead levels of 293 ppm, 203 ppm, 185 ppm, 171 ppm and 39 ppm.
- At a home in the 5700 block of Baring Ave., XRF and lab tests of surface soils found 560 ppm, 425 ppm, 355 ppm, 254 ppm, and 248 ppm of lead.
- At another home in the 5700 block of Baring Ave., XRF and lab tests of surface soils showed lead levels of 400 ppm, 290 ppm, 243 ppm and 101 ppm.
- At a home in the 5700 block of Northcote, tests of surface soils showed 308 ppm, 270 ppm, 231 ppm and 188 ppm of lead.

Meanwhile, IDEM's three 2010 samples of lead in this same neighborhood found much lower lead levels: 131 ppm (1940 Clay St.); 16 ppm (5700 Baring); and 108 ppm (5637 Northcote). These samples and 8 others IDEM took from residential areas in other directions contributed to the report's

conclusion that: "The exposure from lead to the residents surrounding Metals Refining appears to be minimal based on the findings from the current and previous investigations."

USA TODAY also visited the public areas immediately adjacent to the former smelter site and found large holes in the perimeter fence. Soil from the smelter site has washed in many places onto Hump Road. Street side samples of soil along Hump Road showed lead levels of up to 2,850 ppm.

Questions I'm interested in talking with staff about include:

- 1) Was the sampling done around this site adequate to assess soil lead levels in these neighborhoods? (Were IDEM's single samples at an address just a curbside sample? Or were they in residential/private yards? If they were curbside samples, how confident is IDEM that they represent legacy soil – and not more recent fill dirt from streetside projects?)
- 2) It also appears that IDEM's 2010 sampling in this neighborhood is significantly lower than what IDEM found in its 2002 sampling in this neighborhood. While I can't find anywhere in records released by IDEM the detailed sampling results from 2002, Attachment D of the 2010 Site Reassessment Report includes a map with sampling results noted. Because of the scale of the map, it's difficult to determine exact locations. But it appears that in this same neighborhood just northeast from the smelter and across the train tracks that soil tests in 2002 found lead levels in this area of: 420 ppm, 410 ppm, 990 ppm, 480 ppm, 220 ppm, 280 ppm, 350 ppm and 340 ppm. Am I reading the map/results correctly in Attachment D? If so, why did IDEM's most recent three samples in this area come back dramatically lower?
- 3) Does IDEM have any thoughts on why it's sampling on Clay, Baring and Northcote found so much less lead than USA TODAY's sampling?
- 4) When viewing IDEM's own 2002 soil samples in this neighborhood to the northeast of the smelter, is IDEM still confident in its 2010 Site Reassessment Report's conclusion that: "The exposure from lead to the residents surrounding Metals Refining appears to be minimal based on the findings from the current and previous investigations."
- 5) How concerned (or unconcerned) should residents in this neighborhood northeast of this site be about the safety of the soil in their yards – when they read USA TODAY's soil test results, and the 2002 IDEM soil test results? Should residents with young children be growing vegetables in yards in this neighborhood?
- 6) Has IDEM taken actions to notify residents living in areas where it found elevated soil-lead levels? If so, what did it do and when? If not, why?
- 7) Does the property where the former smelter was located pose a health threat? The 2010 report indicates on-site tests showed three of four samples had lead levels from about 5,000 to 20,000 ppm. Is the site adequately secured?
- 8) Is any cleanup planned of the smelter site? Who would be responsible for such a cleanup?
- 9) Is any further assessment or cleanup planned of soils in the neighborhood northeast of the site?

Site 389: Chas. Braman & Sons, 1433 Western Ave., Plymouth, Indiana.

The EPA referred this site, which was listed in industry directories at a Plymouth post office box, to the Indiana Department of Environmental Management for further investigation to determine if it posed a threat. In September 2002, state regulators concluded their investigation and said they could not determine where the smelter had operated. "Numerous historical industrial directories, as well as Sanborn maps, were consulted without finding any reference to this site. Thus, no sampling was conducted for the Charles Braman & Sons," the state said in 2002 memorandum of decision sent to the EPA.

A USA TODAY summer intern found the street address listed for the plant in a 1959 Plymouth telephone book: 1433 Western Ave. The intern contacted Plymouth's city government, which has a digital collection of city council minutes. Those minutes include references to community concern about emissions from the plant impacting residential areas. The December 13, 1954 minutes state that the council heard from several "businessmen" representing the Chamber of Commerce and various residents. "These men all spoke

protesting the smoke and soot which the Charles Braman and Son Co. produces. They asked that the Council take immediate steps toward the abatement of this nuisance."

In response to these complaints, the Plymouth mayor set up a committee to communicate with the company and resolve the issue.

The committee decided to give the company a few weeks to get an abatement process under construction, but it took over two months and the company's owners being called into a council meeting before installation of equipment to curb smoke pollution began.

In May 1955, minutes show, Plymouth's mayor confirmed changes at the site and said they "greatly improved the condition," but four years later the local Air Pollution Board of Control reported the company had filed unsatisfactory progress reports and was seeking a 90-day extension to remedy its smoke situation.

Conditions were still unsatisfactory a year later and the city air board again notified the factory that they were in violation of air pollution ordinances, giving them 15 days to comply or risk having their operations shut down, minutes show.

Five years later, in 1965, the company was still displeasing the city air board. After a meeting between the state board of health and the plant's manager, the minutes say, the board of health decided to require the company to submit blood samples for two employees who handled lead in the plant and provide an action plan for reducing and controlling employee exposure to harmful air pollution.

According to a 1956 article from a local newspaper about Plymouth industries that Plymouth's city attorney recently found in the town's history museum, the Charles Braman and Sons "smelting plant manufactured granular aluminum, solder and lead which is sold to the steel industry, cosmetic industry, chemical and smelting industries... Approximately 150 carloads are produced a year and the company employs an average of 45 people. The firm was established in 1918. The plant was established here in 1950."

USA TODAY recently tested surface soil in the neighborhoods near this plant site (which remains in operation under another name, U.S. Granules Corporation, manufacturing aluminum).

While the current EPA soil standard for residential soils where children play is 400 ppm of lead, other jurisdictions (states and countries) have set 100 ppm of lead as a more protective standard. Studies have found a relationship between soil lead levels (at concentrations below the EPA's 400 ppm guideline) and increased blood-lead levels in children.

Lead levels appear to be elevated in a neighborhood about ¼ mile southeast of the smelter site – especially compared with areas a half-mile to ¾ mile away – where lead levels tended to be below 25 ppm. Some examples:

- At a home in the 1200 block of N. Plum Street, XRF and lab tests showed surface soil lead levels of 176, 375, 567, 443 and 442 ppm.
- At another home in the 1200 block of N. Plum Street, XRF and lab tests showed surface soil levels of 200 ppm, 219 ppm, 63 ppm, 39 ppm, 27 ppm and 14 ppm.
- At home in the 1200 block of N. Center Street, XRF and lab tests showed lead levels of 469 ppm, 468 ppm, 254 ppm, 299 ppm, 41 ppm, 132 ppm, 155 ppm, 32 ppm, and 78 ppm.
- At another home 1100 block of N. Center Street, XRF and lab tests showed surface soil lead levels of 1,511 ppm, 310 ppm, 75 ppm and 192 ppm.
- At a home in the 800 block of N. Plum Street, XRF and lab tests showed surface soil lead levels of 429 ppm, 396 ppm, 118 ppm, 147 ppm, 112 ppm, 211 ppm (in vegetable garden) and 150 ppm (in vegetable garden).
- In the 300 block of North Street, surface soil tests of a home's yard showed: 371 ppm, 355 ppm, 271 ppm, 192 ppm, 171 ppm and 7 ppm of lead.
- In comparison, at a home in the 300 block of Baker Street – about ½ mile southeast of the smelter site – lead tests showed just 12, 19 and 16 ppm. In a public field ¾ miles southeast of the site, the lead level was 25 ppm. In Centennial Park, about 1/3 mile east of the site, four of five samples showed less than 32 ppm of lead.

Questions I'm interested in talking with staff about include:

- 1) Why wasn't IDEM able to locate this plant? Given that information was available from old phone books and Plymouth city officials, was enough done to locate this smelter?**
- 2) From a public health perspective, how concerned should residents living nearest to the former Braman plant be about the potential for the lead levels in their soil to be higher than Plymouth residents who live in other parts of town?**

3) Is there reason to suspect that the elevated levels of lead in residential soils nearer the smelting site are connected with the plant's historical emissions?

4) Given that Plymouth is not a large, industrial city, what is the department's reaction to seeing these levels of lead in people's yards?

3) What advice does IDEM have for people in this community about vegetable gardening in their soil, especially if young children will eat from the garden?

4) Is any further action planned to assess this site?

General topics

I'm also hoping to talk with them about such topics as:

- How do these two sites compare to other sites in your state that involve contaminated soil?
- Does the state have available funds to clean up any new sites that might be identified?
- At what soil lead level does Indiana start looking at remediating soil? What are the preferred methods?
- Did the lead smelter initiative in 2002 that stemmed from William Eckel's list of historical sites result in identifying any sites you all considered to be of significant concern?
- How much of an issue is lead in residential soil around old smelting sites in Indiana?
- What are the challenges in addressing elevated levels of lead in soil, particularly in urban areas?
- Is there adequate funding or program support to investigate and address elevated levels of lead in soil in your state?
- Is the public aware of the potential for lead contamination in their soil? What advice do you have for them if they're concerned?
- How does lead-contaminated soil rank when compared to the various priorities your department is tasked with addressing? What is your department's top priority?

I hope this information and general topics for discussion are helpful.

Again, let me know when staff is available either this week or next week.

Alison

Alison Young
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ayoung@usatoday.com